

Appendix I

Definition of Power Supply
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THE
HARPERCOLLINS
DICTIONARY
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ELECTRONICS

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This book is dedicated to Mrs. Eileen Murphy, whose husband, Daniel Murphy, was my colleague and friend for more than 30 years. Dan's death came shortly after completion of this, our final collaboration.

Eugene Ehrlich

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P R E F

Although the foundations of electronics were laid in the nineteenth century, the technology that has become so much a product of the twentieth century has developed only in the last 50 years. The rapid development of electronics has occurred in the last 50 years. Prior to that time, the word "electronics" was coined, and the topics that we now call electronics were then classed as part of physics. It has now changed from being a developing subject in its own right to an all-pervading subject in its own right, with its own divisions and tangential topics as its own. The rapid rise in electronics has been brought about by the development of the integrated circuit, products of which have been brought about by the integrated circuit itself was a by-product whose effect has been much further than a man on the moon.

As happens with any science that undergoes rapid expansion, explanations and the development of the technology have brought with it a huge quantity of words that have vanished almost as fast as they were of lasting value, and a few that, like "atom" and "electron," have become part of everyday English, though the rate of growth of electronics has been rapid. Although the rate of growth of electronics has been rapid, the flow of new terms has been rapid, and it becomes easier to take stock and use and which were transient. The words of the World War II era, slang words of the World War II era, of modern electronics; in contrast, the attempt to define and explain the terms of modern electronics.

The book is intended to assist in the definitions of electronics terms. The student, whether at school or in the

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POWER AMPLIFIER (PA)

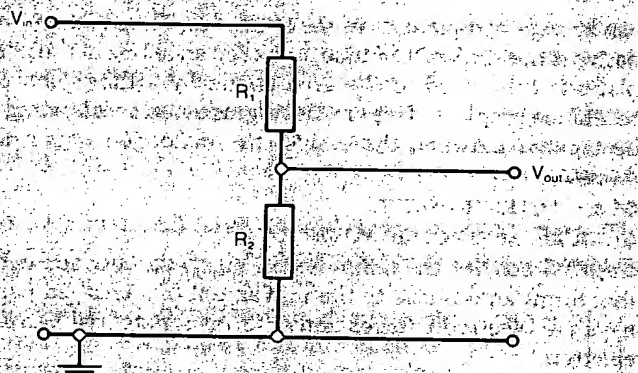


FIG. 73. Potential divider. See this entry

POTENTIAL DIFFERENCE and **CURRENT** $V \times I$. For AC systems, the quantities must be measured in **ROOT MEAN SQUARE** terms and be in phase.

power amplifier (PA) 1. a STAGE that provides output POWER to a LOAD. 2. the final RF AMPLIFIER that provides POWER to the antenna from a transmitter. 3. the audio power-amplifier stage that delivers the signal to the loudspeaker(s).

power component the in-phase component of current or voltage.

power efficiency the ratio of output power to input power, particularly for a TRANSducer.

power factor the fraction by which the product $V \times I$ for AC signals must be multiplied to obtain true POWER. The power factor is equal to the cosine of the phase angle between voltage and current.

power gain the ratio of POWER output to power input for any device or circuit.

power pack a circuit that converts AC power supply voltage into low-voltage DC for an electronic device. The conventional power pack will consist of an AC power transformer, RECTIFIERS and smoothing, possibly with voltage stabilization stages. See also RESERVOIR CAPACITOR.

power supply the source of POWER for an electronic circuit that can be AC power, battery, solar cell, or other methods.

power transistor a TRANSISTOR designed to handle large currents and dissipate heat efficiently. A power transistor has a large area of collector in good thermal contact with a heat sink, which allows the transistor to dissipate a large amount of heat so that the case can be cooled by conduction.

PPI see PLAN POSITION INDICATOR

PPM see PULSE-POSITION MODULATOR

preamplifier (preamp) a STAGE of low-level signal amplification; used in audio and radio frequency amplifiers, the preamp handles a wide range of inputs at various voltage levels. The output will be of about the same amplitude as the input. The output of a preamplifier is not a POWER AMPLIFIER stage.

preemphasis a selective boosting of certain frequencies. Preemphasis is used before transmission for recording on tape or on disk. In all cases, the signal to be concentrated mainly at high frequencies (DE-EMPHASIS) and the receiver or playback device stores the treble to its correct level.

preferred values a set of standard values for RESISTORS and CAPACITORS. These are based on a logarithmic scale. A range of values is selected in a tolerance range, and no value of resistance or capacitance is selected. For example, a nominal 2K2 resistor, for example, could have a value of up to 2K64, or as low as 2K64, and could be as high as 1K8. A range of values must therefore be manufactured, and values must be selected. The remaining components can then be selected from the 10% components, and the remaining tolerance. See Fig. 74.

pre-pulse trigger a TRIGGER PULSE used to generate a master pulse in a radar transmitter, for example. In a radar transmitter, for example, the master pulse is generated and used to generate a series of pulses.